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## SEQUENCE LISTING

<110> Chano, Tokuhiro  
Okabe, Hidetoshi  
Ikegawa, Shiro

<120> RB1 gene induced protein and gene thereof

<130> GP02-1023PCT

<150> JP P2002-161400

<151> 2002-06-03

<150> JP P2002-214978

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<170> PatentIn version 3.1

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Gln Ser Lys Tyr Lys Ile Ala Ile Gln His Gln Val Leu Val Val Asn  
35 40 45

Gly Gly Glu Cys Met Ala Ala Asp Arg Arg Val Cys Thr Tyr Ser Ala  
50 55 60

Gly Thr Asp Thr Asn Pro Ile Phe Leu Phe Asn Lys Glu Met Ile Leu

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65	70	75	80
Cys Asp Arg Pro Pro Ala Ile Pro Lys Thr Thr Phe Ser Thr Glu Asn	85	90	95
Asp Met Glu Ile Lys Val Glu Glu Ser Leu Met Met Pro Ala Val Phe	100	105	110
His Thr Val Ala Ser Arg Thr Gln Leu Ala Leu Glu Met Tyr Glu Val	115	120	125
Ala Lys Lys Leu Cys Ser Phe Cys Glu Gly Leu Val His Asp Glu His	130	135	140
Leu Gln His Gln Gly Trp Ala Ala Ile Met Ala Asn Leu Glu Asp Cys	145	150	155
Ser Asn Ser Tyr Gln Lys Leu Leu Phe Lys Phe Glu Ser Ile Tyr Ser	165	170	175
Asn Tyr Leu Gln Ser Ile Glu Asp Ile Lys Leu Lys Leu Thr His Leu	180	185	190
Gly Thr Ala Val Ser Val Met Ala Lys Ile Pro Leu Leu Glu Cys Leu	195	200	205
Thr Arg His Ser Tyr Arg Glu Cys Leu Gly Arg Leu Asp Ser Leu Pro	210	215	220
Glu His Glu Asp Ser Glu Lys Ala Glu Thr Lys Arg Ser Thr Glu Leu	225	230	235
Val Leu Ser Pro Asp Met Pro Arg Thr Thr Asn Glu Ser Leu Leu Thr	245	250	255

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Ser Phe Pro Lys Ser Val Glu His Val Ser Pro Asp Thr Ala Asp Ala  
260 265 270

Glu Ser Gly Lys Glu Ile Arg Glu Ser Cys Gln Ser Thr Val His Gln  
275 280 285

Gln Asp Glu Thr Thr Ile Asp Thr Lys Asp Gly Asp Leu Pro Phe Phe  
290 295 300

Asn Val Ser Leu Leu Asp Trp Ile Asn Val Gln Asp Arg Pro Asn Asp  
305 310 315 320

Val Glu Ser Leu Val Arg Lys Cys Phe Asp Ser Met Ser Arg Leu Asp  
325 330 335

Pro Arg Ile Ile Arg Pro Phe Ile Ala Glu Cys Arg Gln Thr Ile Ala  
340 345 350

Lys Leu Asp Asn Gln Asn Met Lys Ala Ile Lys Gly Leu Glu Asp Arg  
355 360 365

Leu Tyr Ala Leu Asp Gln Met Ile Ala Ser Cys Gly Arg Leu Val Asn  
370 375 380

Glu Gln Lys Glu Leu Ala Gln Gly Phe Leu Ala Asn Gln Lys Arg Ala  
385 390 395 400

Glu Asn Leu Lys Asp Ala Ser Val Leu Pro Asp Leu Cys Leu Ser His  
405 410 415

Ala Asn Gln Leu Met Ile Met Leu Gln Asn His Arg Lys Leu Leu Asp  
420 425 430

Ile Lys Gln Lys Cys Thr Thr Ala Lys Gln Glu Leu Ala Asn Asn Leu  
435 440 445

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His Val Arg Leu Lys Trp Cys Cys Phe Val Met Leu His Ala Asp Gln  
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Asp Gly Glu Lys Leu Gln Ala Leu Leu Arg Leu Val Ile Glu Leu Leu  
465 470 475 480

Glu Arg Val Lys Ile Val Glu Ala Leu Ser Thr Val Pro Gln Met Tyr  
485 490 495

Cys Leu Ala Val Val Glu Val Val Arg Arg Lys Met Phe Ile Lys His  
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Tyr Arg Glu Trp Ala Gly Ala Leu Val Lys Asp Gly Lys Arg Leu Tyr  
515 520 525

Glu Ala Glu Lys Ser Lys Arg Glu Ser Phe Gly Lys Leu Phe Arg Lys  
530 535 540

Ser Phe Leu Arg Asn Arg Leu Phe Arg Gly Leu Asp Ser Trp Pro Pro  
545 550 555 560

Ser Phe Cys Thr Gln Lys Pro Arg Lys Phe Asp Cys Glu Leu Pro Asp  
565 570 575

Ile Ser Leu Lys Asp Leu Gln Phe Leu Gln Ser Phe Cys Pro Ser Glu  
580 585 590

Val Gln Pro Phe Leu Arg Val Pro Leu Leu Cys Asp Phe Glu Pro Leu  
595 600 605

His Gln His Val Leu Ala Leu His Asn Leu Val Lys Ala Ala Gln Ser  
610 615 620

Leu Asp Glu Met Ser Gln Thr Ile Thr Asp Leu Leu Ser Glu Gln Lys  
625 630 635 640

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Ala Ser Val Ser Gln Thr Ser Pro Gln Ser Ala Ser Ser Pro Arg Met  
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Glu Ser Thr Ala Gly Ile Thr Thr Thr Thr Ser Pro Arg Thr Pro Pro  
660 665 670

Pro Leu Thr Val Gln Asp Pro Leu Cys Pro Ala Val Cys Pro Leu Glu  
675 680 685

Glu Leu Ser Pro Asp Ser Ile Asp Ala His Thr Phe Asp Phe Glu Thr  
690 695 700

Ile Pro His Pro Asn Ile Glu Gln Thr Ile His Gln Val Ser Leu Asp  
705 710 715 720

Leu Asp Ser Leu Ala Glu Ser Pro Glu Ser Asp Phe Met Ser Ala Val  
725 730 735

Asn Glu Phe Val Ile Glu Glu Asn Leu Ser Ser Pro Asn Pro Ile Ser  
740 745 750

Asp Pro Gln Ser Pro Glu Met Met Val Glu Ser Leu Tyr Ser Ser Val  
755 760 765

Ile Asn Ala Ile Asp Ser Arg Arg Met Gln Asp Thr Asn Val Cys Gly  
770 775 780

Lys Glu Asp Phe Gly Asp His Thr Ser Leu Asn Val Gln Leu Glu Arg  
785 790 795 800

Cys Arg Val Val Ala Gln Asp Ser His Phe Ser Ile Gln Thr Ile Lys  
805 810 815

Glu Asp Leu Cys His Phe Arg Thr Phe Val Gln Lys Glu Gln Cys Asp

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820

825

830

Phe Ser Asn Ser Leu Lys Cys Thr Ala Val Glu Ile Arg Asn Ile Ile  
835 840 845

Glu Lys Val Lys Cys Ser Leu Glu Ile Thr Leu Lys Glu Lys His Gln  
850 855 860

Lys Glu Leu Leu Ser Leu Lys Asn Glu Tyr Glu Gly Lys Leu Asp Gly  
865 870 875 880

Leu Ile Lys Glu Thr Glu Glu Asn Glu Asn Lys Ile Lys Lys Leu Lys  
885 890 895

Gly Glu Leu Val Cys Leu Glu Glu Val Leu Gln Asn Lys Asp Asn Glu  
900 905 910

Phe Ala Leu Val Lys His Glu Lys Glu Ala Val Ile Cys Leu Gln Asn  
915 920 925

Glu Lys Asp Gln Lys Leu Leu Glu Met Glu Asn Ile Met His Ser Gln  
930 935 940

Asn Cys Glu Ile Lys Glu Leu Lys Gln Ser Arg Glu Ile Val Leu Glu  
945 950 955 960

Asp Leu Lys Lys Leu His Val Glu Asn Asp Glu Lys Leu Gln Leu Leu  
965 970 975

Arg Ala Glu Leu Gln Ser Leu Glu Gln Ser His Leu Lys Glu Leu Glu  
980 985 990

Asp Thr Leu Gln Val Arg His Ile Gln Glu Phe Glu Lys Val Met Thr  
995 1000 1005

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Asp His Arg Val Ser Leu Glu Glu Leu Lys Lys Glu Asn Gln Gln  
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Ile Ile Asn Gln Ile Gln Glu Ser His Ala Glu Ile Ile Gln Glu  
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Lys Glu Lys Gln Leu Gln Glu Leu Lys Leu Lys Val Ser Asp Leu  
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Ser Asp Thr Arg Cys Lys Leu Glu Val Glu Leu Ala Leu Lys Glu  
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Ala Glu Thr Asp Glu Ile Lys Ile Leu Leu Glu Glu Ser Arg Ala  
 1070 1075 1080

Gln Gln Lys Glu Thr Leu Lys Ser Leu Leu Glu Gln Glu Thr Glu  
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Asn Leu Arg Thr Glu Ile Ser Lys Leu Asn Gln Lys Ile Gln Asp  
 1100 1105 1110

Asn Asn Glu Asn Tyr Gln Val Gly Leu Ala Glu Leu Arg Thr Leu  
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Met Thr Ile Glu Lys Asp Gln Arg Ile Ser Glu Leu Ile Ser Arg  
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His Glu Glu Glu Ser Asn Ile Leu Lys Ala Glu Leu Asn Lys Val  
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Thr Ser Leu His Asn Gln Ala Phe Glu Ile Glu Lys Asn Leu Lys  
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Glu Gln Ile Ile Glu Leu Gln Ser Lys Leu Asp Ser Glu Leu Ser  
 1175 1180 1185

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Ala Leu Glu Arg Gln Lys Asp Glu Lys Ile Thr Gln Gln Glu Glu  
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Lys Tyr Glu Ala Ile Ile Gln Asn Leu Glu Lys Asp Arg Gln Lys  
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Leu Val Ser Ser Gln Glu Gln Asp Arg Glu Gln Leu Ile Gln Lys  
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Leu Asn Cys Glu Lys Asp Glu Ala Ile Gln Thr Ala Leu Lys Glu  
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Phe Lys Leu Glu Arg Glu Val Val Glu Lys Glu Leu Leu Glu Lys  
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Val Lys His Leu Glu Asn Gln Ile Ala Lys Ser Pro Ala Ile Asp  
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Ser Thr Arg Gly Asp Ser Ser Ser Leu Val Ala Glu Leu Gln Glu  
1280 1285 1290

Lys Leu Gln Glu Glu Lys Ala Lys Phe Leu Glu Gln Leu Glu Glu  
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Gln Glu Lys Arg Lys Asn Glu Glu Met Gln Asn Val Arg Thr Ser  
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Leu Ile Ala Glu Gln Gln Thr Asn Phe Asn Thr Val Leu Thr Arg  
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Glu Lys Met Arg Lys Glu Asn Ile Ile Asn Asp Leu Ser Asp Lys  
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Leu Lys Ser Thr Met Gln Gln Gln Glu Arg Asp Lys Asp Leu Ile  
1355 1360 1365



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Glu Ser Leu Ser Glu Asp Arg Ala Arg Leu Leu Glu Glu Lys Lys  
1370 1375 1380

Lys Leu Glu Glu Glu Val Ser Lys Leu Arg Ser Ser Ser Phe Val  
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Pro Ser Pro Tyr Val Ala Thr Ala Pro Glu Leu Tyr Gly Ala Cys  
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Ala Pro Glu Leu Pro Gly Glu Ser Asp Arg Ser Ala Val Glu Thr  
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Ala Asp Glu Gly Arg Val Asp Ser Ala Met Glu Thr Ser Met Met  
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Ser Val Gln Glu Asn Ile His Met Leu Ser Glu Glu Lys Gln Arg  
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Ile Met Leu Leu Glu Arg Thr Leu Gln Leu Lys Glu Glu Glu Asn  
1460 1465 1470

Lys Arg Leu Asn Gln Arg Leu Met Ser Gln Ser Met Ser Ser Val  
1475 1480 1485

Ser Ser Arg His Ser Glu Lys Ile Ala Ile Arg Asp Phe Gln Val  
1490 1495 1500

Gly Asp Leu Val Leu Ile Ile Leu Asp Glu Arg His Asp Asn Tyr  
1505 1510 1515

Val Leu Phe Thr Val Ser Pro Thr Leu Tyr Phe Leu His Ser Glu  
1520 1525 1530

Ser Leu Pro Ala Leu Asp Leu Lys Pro Gly Glu Gly Ala Ser Gly

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 Ala Ser Arg Arg Pro Trp Val Leu Gly Lys Val Met Glu Lys Glu  
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 Tyr Cys Gln Ala Lys Lys Ala Gln Asn Arg Phe Lys Val Pro Leu  
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 20                      25                      30

Gln Ser Lys Tyr Lys Ile Ala Ile Gln His Gln Val Leu Val Val Asn  
 35                      40                      45

Gly Gly Glu Cys Met Ala Ala Asp Arg Arg Val Cys Thr Tyr Ser Ala  
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Gly Thr Asp Thr Asn Pro Ile Phe Leu Phe Asn Lys Glu Met Ile Leu  
 65                      70                      75                      80

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Cys Asp Arg Ala Pro Ala Ile Pro Lys Ala Thr Phe Ser Thr Glu Asn  
85 90 95

Asp Met Glu Ile Lys Val Glu Glu Ser Leu Met Met Pro Ala Val Phe  
100 105 110

His Thr Val Ala Ser Arg Thr Gln Leu Ala Val Glu Met Tyr Asp Val  
115 120 125

Ala Lys Lys Leu Cys Ser Phe Cys Glu Gly Leu Val His Asp Glu His  
130 135 140

Leu Gln His Gln Gly Trp Ala Ala Ile Met Ala Asn Leu Glu Asp Cys  
145 150 155 160

Ser Asn Ser Tyr Gln Lys Leu Leu Phe Lys Phe Glu Ser Ile Tyr Ser  
165 170 175

Asp Tyr Leu Gln Ser Ile Glu Asp Ile Lys Leu Lys Leu Thr His Leu  
180 185 190

Gly Thr Ala Val Ser Val Met Ala Lys Ile Pro Leu Leu Glu Cys Leu  
195 200 205

Thr Arg His Ser Tyr Arg Glu Cys Leu Gly Arg Pro Asp Ser Leu Asn  
210 215 220

Glu His Glu Gly Ser Glu Lys Ala Glu Met Lys Arg Ser Thr Glu Leu  
225 230 235 240

Val Leu Ser Pro Asp Met Pro Arg Thr Thr Asn Thr Ser Leu Val Thr  
245 250 255

Ser Phe His Lys Ser Met Glu His Val Ala Pro Asp Pro Thr Gly Thr

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260

265

270

Glu Arg Gly Lys Glu Leu Arg Glu Ser Cys Gln Ser Thr Val Gln Gln  
275 280 285

Glu Glu Ala Ser Val Asp Ala Lys Asp Ser Asp Leu Pro Phe Phe Asn  
290 295 300

Val Ser Leu Leu Asp Trp Ile Asn Val Gln Asp Arg Pro Asn Asp Val  
305 310 315 320

Glu Ser Leu Val Arg Lys Cys Phe Asp Ser Met Ser Arg Leu Asp Pro  
325 330 335

Lys Ile Ile Gln Pro Phe Met Leu Glu Cys His Gln Thr Ile Ala Lys  
340 345 350

Leu Asp Asn Gln Asn Met Lys Ala Ile Lys Gly Leu Glu Asp Arg Leu  
355 360 365

Tyr Ala Leu Asp Gln Met Ile Ala Ser Cys Ser Arg Leu Val Asn Glu  
370 375 380

Gln Lys Glu Leu Ala Gln Gly Phe Leu Ala Asn Gln Met Arg Ala Glu  
385 390 395 400

Asn Leu Lys Asp Ala Ser Val Leu Pro Asp Leu Cys Leu Ser His Ala  
405 410 415

Asn Gln Leu Met Ile Met Leu Gln Asn His Arg Lys Leu Leu Asp Ile  
420 425 430

Lys Gln Lys Cys Thr Thr Ala Lys Gln Glu Leu Ala Asn Asn Leu His  
435 440 445

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Val Arg Leu Lys Trp Cys Cys Phe Val Met Leu His Ala Asp Gln Asp  
450 455 460

Gly Glu Lys Leu Gln Ala Leu Leu Arg Leu Val Ile Glu Leu Leu Glu  
465 470 475 480

Arg Val Arg Ile Val Glu Ala Leu Ser Thr Val Pro Gln Met Tyr Cys  
485 490 495

Leu Ala Val Val Glu Val Val Arg Arg Lys Met Phe Ile Lys His Tyr  
500 505 510

Arg Glu Trp Ala Gly Ala Leu Val Lys Asp Gly Lys Gln Leu Tyr Glu  
515 520 525

Ala Glu Lys Ser Lys Arg Glu Ser Phe Gly Lys Leu Phe Arg Lys Ser  
530 535 540

Phe Leu Arg Asn Arg Leu Phe Lys Gly Leu Asp Ser Trp Pro Ser Ser  
545 550 555 560

Phe Cys Thr Gln Lys Pro Arg Lys Phe Asp Cys Glu Leu Pro Asp Ile  
565 570 575

Ser Leu Lys Asp Leu Gln Phe Leu Gln Ser Phe Cys Pro Ser Glu Val  
580 585 590

Gln Pro Phe Leu Arg Val Pro Leu Leu Cys Asp Phe Glu Pro Leu His  
595 600 605

Gln His Val Leu Ala Leu His Asn Leu Val Lys Ala Ala Gln Ser Leu  
610 615 620

Asp Glu Met Ser Gln Thr Ile Thr Asp Leu Leu Asn Glu Gln Lys Val  
625 630 635 640

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Ser Thr Ser Gln Ala Ser Pro Gln Ser Ala Ala Ser Pro Arg Ile Glu  
645 650 655

Ser Thr Thr Gly Ile Thr Thr Thr Thr Ser Pro Lys Thr Pro Pro Pro  
660 665 670

Leu Thr Val Gln Asp Thr Leu Cys Pro Ala Val Cys Pro Leu Glu Glu  
675 680 685

Leu Ser Pro Asp Ser Ile Asp Ala His Thr Phe Asp Phe Glu Thr Ile  
690 695 700

Ser His Pro Asn Thr Glu Gln Pro Val His Gln Ala Ser Ile Asp Leu  
705 710 715 720

Asp Ser Leu Ala Glu Ser Pro Glu Ser Asp Phe Met Ser Ala Val Asn  
725 730 735

Glu Phe Val Ile Glu Glu Asn Leu Ser Ser Pro Asn Pro Ile Ser Asp  
740 745 750

Pro Gln Ser Pro Glu Met Met Val Glu Ser Leu Tyr Ser Ser Val Ile  
755 760 765

Asn Ala Ile Asp Ser Arg Arg Met Gln Asp Thr Ser Thr Arg Gly Asn  
770 775 780

Glu Gly Phe Gly Asp Arg Ala Ala Leu His Val Gln Leu Glu Lys Cys  
785 790 795 800

Arg Ala Ala Ala Gln Asp Ser His Thr Ser Ile Gln Thr Ile Lys Asp  
805 810 815

Asp Leu Cys His Phe Arg Thr Phe Val Gln Lys Glu Gln Cys Asp Leu  
820 825 830

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Ala Asn Tyr Leu Lys Cys Thr Ala Val Glu Ile Arg Asn Ile Ile Glu  
835 840 845

Lys Val Lys Cys Ser Leu Glu Ile Thr Leu Lys Glu Lys His Gln Gln  
850 855 860

Glu Leu Gln Ser Leu Lys Ile Glu Tyr Glu Cys Lys Leu Asp Ala Leu  
865 870 875 880

Val Lys Asp Ser Glu Glu Asn Val Asn Lys Ile Leu Lys Leu Lys Glu  
885 890 895

Asn Leu Val Ser Leu Glu Glu Ala Leu Gln Asn Lys Asp Asn Glu Phe  
900 905 910

Thr Ser Ile Lys His Glu Lys Asp Ala Ile Val Cys Val Gln Gln Glu  
915 920 925

Lys Asp Gln Lys Leu Leu Glu Met Glu Lys Ile Met His Thr Gln His  
930 935 940

Cys Glu Ile Lys Glu Leu Lys Gln Ser Arg Glu Met Ala Leu Glu Asp  
945 950 955 960

Leu Lys Lys Leu His Asp Glu Lys Ile Glu Ser Leu Arg Ala Glu Phe  
965 970 975

Gln Cys Leu Glu Glu Asn His Leu Lys Glu Leu Glu Asp Thr Leu His  
980 985 990

Ile Arg His Thr Gln Glu Phe Glu Lys Val Met Thr Asp His Asn Met  
995 1000 1005

Ser Leu Glu Lys Leu Lys Lys Glu Asn Gln Gln Arg Ile Asp Gln

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1010

1015

1020

Met Leu Glu Ser His Ala Ser Thr Ile Gln Glu Lys Glu Gln Gln  
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Leu Gln Glu Leu Lys Leu Lys Val Ser Asp Leu Ser Asp Met Arg  
 1040 1045 1050

Cys Lys Leu Glu Val Glu Leu Ala Leu Lys Glu Ala Glu Thr Asp  
 1055 1060 1065

Glu Ile Lys Ile Leu Leu Glu Glu Ser Arg Thr Gln Gln Lys Glu  
 1070 1075 1080

Met Leu Lys Ser Leu Leu Glu Gln Glu Thr Glu Asn Leu Arg Thr  
 1085 1090 1095

Glu Ile Ser Lys Leu Asn Gln Lys Ile His Asp Asn Asn Glu Ser  
 1100 1105 1110

Tyr Gln Val Gly Leu Ser Glu Leu Arg Ala Leu Met Thr Ile Glu  
 1115 1120 1125

Lys Asp Gln Cys Ile Ser Glu Leu Ile Ser Arg His Glu Glu Glu  
 1130 1135 1140

Ser Asn Ile Leu Lys Ala Glu Leu Asp Asn Val Thr Ser Leu His  
 1145 1150 1155

Arg Gln Ala Tyr Glu Ile Glu Lys Lys Leu Lys Glu Gln Ile Val  
 1160 1165 1170

Glu Leu Gln Thr Arg Leu Asn Ser Glu Leu Ser Ala Leu Glu Lys  
 1175 1180 1185



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Gln Lys Asp Glu Lys Ile Thr Gln Gln Glu Glu Lys Tyr Glu Ala  
 1190 1195 1200

Leu Ile Gln Asn Leu Glu Lys Asp Lys Glu Arg Leu Val Lys Asn  
 1205 1210 1215

His Glu Gln Asp Lys Glu His Leu Ile Gln Glu Leu Asn Phe Glu  
 1220 1225 1230

Lys Asn Lys Ala Val Gln Thr Ala Leu Asp Glu Phe Lys Val Glu  
 1235 1240 1245

Arg Glu Leu Val Glu Lys Glu Leu Leu Glu Lys Val Lys His Leu  
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Asp Ser Ser Ser Leu Val Ala Glu Leu Gln Glu Lys Leu Gln Glu  
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Lys Asn Glu Glu Met Gln Asn Val Arg Thr Ser Leu Ile Ala Glu  
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Gln Gln Thr Asn Phe Asn Thr Val Leu Thr Arg Glu Lys Met Arg  
 1325 1330 1335

Lys Glu Asn Ile Ile Asn Asp Leu Ser Asp Lys Leu Lys Ser Thr  
 1340 1345 1350

Met Gln Gln Gln Glu Arg Asp Lys Asp Leu Ile Glu Ser Leu Ser  
 1355 1360 1365

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Glu Asp Arg Ala Arg Leu Leu Glu Glu Lys Lys Gln Leu Glu Glu  
1370 1375 1380

Glu Val Ser Lys Leu Arg Thr Ser Ser Phe Leu Ser Ser Ala Pro  
1385 1390 1395

Val Ala Ala Ala Pro Glu Leu Tyr Gly Ala Cys Ala Pro Glu Leu  
1400 1405 1410

Pro Gly Glu Pro Glu Arg Ser Val Met Glu Thr Ala Asp Glu Gly  
1415 1420 1425

Arg Leu Asp Ser Ala Met Glu Thr Ser Met Met Ser Val Gln Glu  
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Asn Met Leu Ser Glu Glu Lys Gln Arg Ile Met Leu Leu Glu Arg  
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Thr Leu Gln Leu Lys Glu Glu Glu Asn Lys Arg Leu Asn Gln Arg  
1460 1465 1470

Leu Met Ser Gln Ser Leu Ser Ser Val Ser Ser Arg His Ser Glu  
1475 1480 1485

Lys Ile Ala Ile Arg Asp Phe Gln Val Gly Asp Leu Val Leu Ile  
1490 1495 1500

Ile Leu Asp Glu Arg His Asp Asn Tyr Val Leu Phe Thr Val Ser  
1505 1510 1515

Pro Thr Leu Tyr Phe Leu His Ser Glu Ser Leu Pro Ala Leu Asp  
1520 1525 1530

Leu Lys Pro Gly Glu Gly Ala Ser Gly Ala Ser Arg Arg Pro Trp  
1535 1540 1545

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Val Leu Gly Lys Val Met Glu Lys Glu Tyr Cys Gln Ala Lys Lys  
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Val Lys Ala Val Ser Trp Asn Lys Lys Val  
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&lt;212&gt; DNA

&lt;213&gt; Artificial

&lt;220&gt;

&lt;223&gt; artificially synthesized primer sequence called CC1-AS1

&lt;400&gt; 26

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21

&lt;210&gt; 27

&lt;211&gt; 20

&lt;212&gt; DNA

&lt;213&gt; Artificial

&lt;220&gt;

&lt;223&gt; artificially synthesized primer sequence called RB1CC-RS1

&lt;400&gt; 27

cctccctgcc tcctagagtt

20

&lt;210&gt; 28

&lt;211&gt; 20

35 / 61

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<220>

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20

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<211> 20

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<220>

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20

<210> 30

<211> 21

<212> DNA

<213> Artificial

<220>

<223> artificially synthesized primer sequence called RB1CC-R2

<400> 30

tgccacagtt tgcactgtaa g

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<213> Artificial

<220>

<223> artificially synthesized primer sequence called RB1CC-R1

<400> 31

tttccaatgc aagctgtgtc

20

<210> 32

36 / 61

<211> 21  
<212> DNA  
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<220>

<223> artificially synthesized primer sequence called RB1CC-RS2

<400> 32

gagtgaaga cgtatcatgg a

21

<210> 33  
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<220>

<223> artificially synthesized primer sequence called RB1CC-RS3

<400> 33

aatgcggacc aaactacttc a

21

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<220>

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tcagtggatt ggtoatctgg

20

<210> 35  
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<220>

<223> artificially synthesized primer sequence called RB1CC-RS5

<400> 35

tgattgctgg gaagtgtgaa

20

37 / 61

<210> 36  
<211> 23  
<212> DNA  
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<220>

<223> artificially synthesized primer sequence called RB1CC-RS6

<400> 36  
gagaattggt tgaggtttgt tgc

23

<210> 37  
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<220>

<223> artificially synthesized primer sequence called RB1CC-R5

<400> 37  
ttgctcaatg gcaacttctc

20

<210> 38  
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<220>

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<400> 38  
gggtgaggta taagtcaca gaa

23

<210> 39  
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<212> DNA  
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<220>

<223> artificially synthesized primer sequence called MMK3-2-S

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tcttatgtga tcttcacct g

21

38 / 61

<210> 40  
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<220>

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23

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<220>

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26

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20

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20

39 / 61

<210> 44  
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23

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21

<210> 46  
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23

<210> 47  
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<220>

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<400> 47

40 / 61

cttaccaccc tcacctggtt

20

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&lt;211&gt; 26

&lt;212&gt; DNA

&lt;213&gt; Artificial

&lt;220&gt;

&lt;223&gt; artificially synthesized primer sequence called MMK40-S

&lt;400&gt; 48

ttttgtattt taagtttagg aactgc

26

&lt;210&gt; 49

&lt;211&gt; 23

&lt;212&gt; DNA

&lt;213&gt; Artificial

&lt;220&gt;

&lt;223&gt; artificially synthesized primer sequence called MMK38-S

&lt;400&gt; 49

ataggataca aatccaattt ttc

23

&lt;210&gt; 50

&lt;211&gt; 27

&lt;212&gt; DNA

&lt;213&gt; Artificial

&lt;220&gt;

&lt;223&gt; artificially synthesized primer sequence called MMK31-S

&lt;400&gt; 50

aaaatatagg atacaaatcc aatgaca

27

&lt;210&gt; 51

&lt;211&gt; 24

&lt;212&gt; DNA

&lt;213&gt; Artificial

&lt;220&gt;

&lt;223&gt; artificially synthesized primer sequence called MMK36-S



41 / 61

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<210> 52  
<211> 19  
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gccaacctgg aggactgtt 19

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<210> 55  
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<220>  
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42 / 61

<400> 55  
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gatgcctgca gttttocaca 20

<210> 57  
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<210> 58  
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<220>  
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<400> 58  
gcttcttctt gctggacagt 20

<210> 59  
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<220>

43 / 61

<223> artificially synthesized primer sequence called MCC-S11

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ccttggacca gatgattgct

20

<210> 60

<211> 21

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<220>

<223> artificially synthesized primer sequence called MCC-S9

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21

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<212> DNA

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<223> artificially synthesized primer sequence called MCC-AS8

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<210> 62

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<400> 62

tgctgcacaa gactctcaca

20

<210> 63

<211> 21

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44 / 61

&lt;220&gt;

&lt;223&gt; artificialy synthesized primer sequence called MCC-AS6

&lt;400&gt; 63

ggcacagatc gtccttgatg g

21

&lt;210&gt; 64

&lt;211&gt; 22

&lt;212&gt; DNA

&lt;213&gt; Artificial

&lt;220&gt;

&lt;223&gt; artificially synthesized primer sequence called MCC-S13

&lt;400&gt; 64

tgaacttgca ctaaaggaag ca

22

&lt;210&gt; 65

&lt;211&gt; 20

&lt;212&gt; DNA

&lt;213&gt; Artificial

&lt;220&gt;

&lt;223&gt; artificially synthesized primer sequence called MCC-AS7

&lt;400&gt; 65

cagcatttcc ttctgctgtg

20

&lt;210&gt; 66

&lt;211&gt; 24

&lt;212&gt; DNA

&lt;213&gt; Artificial

&lt;220&gt;

&lt;223&gt; artificially synthesized primer sequence called MCC-S14

&lt;400&gt; 66

tgagtgtctt tgaaaaacag aaag

24

&lt;210&gt; 67

&lt;211&gt; 21

&lt;212&gt; DNA

&lt;213&gt; Artificial

45 / 61

&lt;220&gt;

&lt;223&gt; artificially synthesized primer sequence called MCC-S15

&lt;400&gt; 67

ttgcggaact toaagagaaa c

21

&lt;210&gt; 68

&lt;211&gt; 24

&lt;212&gt; DNA

&lt;213&gt; Artificial

&lt;220&gt;

&lt;223&gt; artificially synthesized primer sequence called MIRB1CC-5

&lt;400&gt; 68

ctggaacaac ttgaagaaca agag

24

&lt;210&gt; 69

&lt;211&gt; 20

&lt;212&gt; DNA

&lt;213&gt; Artificial

&lt;220&gt;

&lt;223&gt; artificially synthesized primer sequence called MIRB1CC-3

&lt;400&gt; 69

acgagctogg tcctcagaga

20

&lt;210&gt; 70

&lt;211&gt; 20

&lt;212&gt; DNA

&lt;213&gt; Artificial

&lt;220&gt;

&lt;223&gt; artificially synthesized primer sequence called MCC-S3

&lt;400&gt; 70

tcaggtggga gatttggttc

20

&lt;210&gt; 71

&lt;211&gt; 20

&lt;212&gt; DNA

46 / 61

&lt;213&gt; Artificial

&lt;220&gt;

&lt;223&gt; artificially synthesized primer sequence called MCC-AS3

&lt;400&gt; 71

tgccgctcat ctaggatgat

20

&lt;210&gt; 72

&lt;211&gt; 20

&lt;212&gt; DNA

&lt;213&gt; Artificial

&lt;220&gt;

&lt;223&gt; artificially synthesized primer sequence called MCC-AS2

&lt;400&gt; 72

cagcactgga ggacaaatca

20

&lt;210&gt; 73

&lt;211&gt; 20

&lt;212&gt; DNA

&lt;213&gt; Artificial

&lt;220&gt;

&lt;223&gt; artificially synthesized primer sequence called MCC-AS1

&lt;400&gt; 73

agtcacaagc cacagtgcag

20

&lt;210&gt; 74

&lt;211&gt; 20

&lt;212&gt; DNA

&lt;213&gt; Artificial

&lt;220&gt;

&lt;223&gt; artificially synthesized primer sequence called MCC-ASR1

&lt;400&gt; 74

tgctttgaat ggcattgotta

20

&lt;210&gt; 75

&lt;211&gt; 20

47 / 61

<212> DNA  
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<220>

<223> artificially synthesized primer sequence called MCC-ASR2

<400> 75

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20

<210> 76

<211> 18

<212> DNA

<213> Artificial

<220>

<223> artificially synthesized primer sequence called MCC-ASR3

<400> 76

cctccgcaac atcttctg

18

<210> 77

<211> 18

<212> DNA

<213> Artificial

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<400> 77

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18

<210> 78

<211> 20

<212> DNA

<213> Artificial

<220>

<223> artificially synthesized primer sequence called MCC-SR1

<400> 78

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20

<210> 79

48 / 61

<211> 20  
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20

<210> 80  
<211> 21  
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<220>

<223> artificially synthesized primer sequence called MCC3-S3

<400> 80

ttttgagttt gcctcagaag a

21

<210> 81  
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<212> DNA  
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<220>

<223> artificially synthesized primer sequence called MCC3-S4

<400> 81

toggaattca tggttgacct

20

<210> 82  
<211> 20  
<212> DNA  
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<220>

<223> artificially synthesized primer sequence called MCC3-AS2

<400> 82

tttccagaa atcaogcaat

20



49 / 61

<210> 83  
<211> 21  
<212> DNA  
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<220>

<223> artificially synthesized primer sequence called MCC3-AS13

<400> 83  
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21

<210> 84  
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<223> artificially synthesized primer sequence called MCC15S

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20

<210> 85  
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<212> DNA  
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<400> 85  
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20

<210> 86  
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<400> 86  
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20

50 / 61

<210> 87  
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<220>

<223> artificially synthesized primer sequence called MCC-3AS

<400> 87

gtgtcaaatg tcagcgtggt

20

<210> 88  
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<220>

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<400> 88

gacggttgtg toggttgg

18

<210> 89  
<211> 20  
<212> DNA  
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<220>

<223> artificially synthesized primer sequence called MINT1-AS

<400> 89

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20

<210> 90  
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<223> artificially synthesized primer sequence called MINT2-S0

<400> 90

tgccaactcag ttgccaagta

20

51 / 61

<210> 91  
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cacagtatct ggcgtaagt ca

22

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<400> 92

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<210> 93  
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<223> artificially synthesized primer sequence called MINT4-S

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20

<210> 94  
<211> 20  
<212> DNA  
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<220>

<223> artificially synthesized primer sequence called MINT4-AS

<400> 94

52 / 61

caggtgcacg gtcacataag

20

&lt;210&gt; 95

&lt;211&gt; 20

&lt;212&gt; DNA

&lt;213&gt; Artificial

&lt;220&gt;

&lt;223&gt; artificially synthesized primer seuqnece called MINT5-S

&lt;400&gt; 95

gcagttttcc acaotgttgc

20

&lt;210&gt; 96

&lt;211&gt; 20

&lt;212&gt; DNA

&lt;213&gt; Artificial

&lt;220&gt;

&lt;223&gt; artificially synthesized primer sequence called MINT5-AS

&lt;400&gt; 96

ctccagattg gccatgattg

20

&lt;210&gt; 97

&lt;211&gt; 20

&lt;212&gt; DNA

&lt;213&gt; Artificial

&lt;220&gt;

&lt;223&gt; artificially synthesized primer sequence called MINT6-S

&lt;400&gt; 97

gccaatctgg aggactgttc

20

&lt;210&gt; 98

&lt;211&gt; 20

&lt;212&gt; DNA

&lt;213&gt; Artificial

&lt;220&gt;

&lt;223&gt; artificially synthesized primer seuqnece called MINT6-AS

53 / 61

<400> 98  
agaatccggt cttoccaaac 20

<210> 99  
<211> 21  
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<220>  
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cccaatgatg tggaatctct g 21

<210> 100  
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<400> 100  
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<210> 101  
<211> 19  
<212> DNA  
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<220>  
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<400> 101  
aagatoggct gtagcctt 19

<210> 102  
<211> 22  
<212> DNA  
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<220>  
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54 / 61

<400> 102  
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22

<210> 103  
<211> 21  
<212> DNA  
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&lt;220&gt;

&lt;223&gt; artificially synthesized primer sequence called MINT9-S

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ggatgcattt gtgttacotg a

21

<210> 104  
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&lt;220&gt;

&lt;223&gt; artificially synthesized primer sequence called MINT9-AS

<400> 104  
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20

<210> 105  
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&lt;220&gt;

&lt;223&gt; artificially synthesized primer sequence called MINT10-S

<400> 105  
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20

<210> 106  
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&lt;220&gt;

55 / 61

<223> artificially synthesized primer sequence called MINT10-AS

<400> 106

ccaaaggatt cccttttga

20

<210> 107

<211> 20

<212> DNA

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20

<210> 108

<211> 20

<212> DNA

<213> Artificial

<220>

<223> artificially synthesized primer sequence called MINT11-AS

<400> 108

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20

<210> 109

<211> 20

<212> DNA

<213> Artificial

<220>

<223> artificially synthesized primer sequence called MINT12-S

<400> 109

actcctggcc ttctcattt

20

<210> 110

<211> 20

<212> DNA

<213> Artificial

56 / 61

&lt;220&gt;

&lt;223&gt; artificially synthesized primer sequence called MINT12-AS

&lt;400&gt; 110

tgagggaatgg ctgcacttct

20

&lt;210&gt; 111

&lt;211&gt; 21

&lt;212&gt; DNA

&lt;213&gt; Artificial

&lt;220&gt;

&lt;223&gt; artificially synthesized primer sequence called MINT13-S

&lt;400&gt; 111

gocctcgaaaa ttgactgtg a

21

&lt;210&gt; 112

&lt;211&gt; 21

&lt;212&gt; DNA

&lt;213&gt; Artificial

&lt;220&gt;

&lt;223&gt; artificially synthesized primer sequence called MINT13-AS

&lt;400&gt; 112

tccaaaacttt gtgotgcttt t

21

&lt;210&gt; 113

&lt;211&gt; 21

&lt;212&gt; DNA

&lt;213&gt; Artificial

&lt;220&gt;

&lt;223&gt; artificially synthesized primer sequence called MINT14-S

&lt;400&gt; 113

aaaagcagca caaagtttgg a

21

&lt;210&gt; 114

&lt;211&gt; 20

&lt;212&gt; DNA

&lt;213&gt; Artificial



57 / 61

&lt;220&gt;

&lt;223&gt; artificially synthesized primer sequence called MINT14-AS

&lt;400&gt; 114

tggaggagga gtttttggtg

20

&lt;210&gt; 115

&lt;211&gt; 20

&lt;212&gt; DNA

&lt;213&gt; Artificial

&lt;220&gt;

&lt;223&gt; artificially synthesized primer sequence called MINT15-S

&lt;400&gt; 115

ccaagagcaa gacaaagaac

20

&lt;210&gt; 116

&lt;211&gt; 21

&lt;212&gt; DNA

&lt;213&gt; Artificial

&lt;220&gt;

&lt;223&gt; artificially synthesized primer sequence called MINT15-AS

&lt;400&gt; 116

tccgcaacta agcttgaaga a

21

&lt;210&gt; 117

&lt;211&gt; 20

&lt;212&gt; DNA

&lt;213&gt; Artificial

&lt;220&gt;

&lt;223&gt; artificially synthesized primer sequence called MINT16-S

&lt;400&gt; 117

tgaggaaatg caaaatgtca

20

&lt;210&gt; 118

&lt;211&gt; 20

&lt;212&gt; DNA

58 / 61

&lt;213&gt; Artificial

&lt;220&gt;

&lt;223&gt; artificially synthesized primer sequence called MINT16-AS

&lt;400&gt; 118

gctcttgctg ctgcattgta

20

&lt;210&gt; 119

&lt;211&gt; 22

&lt;212&gt; DNA

&lt;213&gt; Artificial

&lt;220&gt;

&lt;223&gt; artificially synthesized primer sequence called MINT17-S

&lt;400&gt; 119

aaagtacaat gcagcagcaa ga

22

&lt;210&gt; 120

&lt;211&gt; 21

&lt;212&gt; DNA

&lt;213&gt; Artificial

&lt;220&gt;

&lt;223&gt; artificially synthesized primer sequence called MINT17-AS

&lt;400&gt; 120

tgctgaggaa agaaaactgc t

21

&lt;210&gt; 121

&lt;211&gt; 19

&lt;212&gt; DNA

&lt;213&gt; Artificial

&lt;220&gt;

&lt;223&gt; artificially synthesized primer sequence called MINT18-S

&lt;400&gt; 121

agctctatgg tgogtgtgc

19

&lt;210&gt; 122

&lt;211&gt; 21

59 / 61

<212> DNA  
<213> Artificial

<220>

<223> artificially synthesized primer sequence called MINT18-AS

<400> 122

gagcatgac ctotgcttct c

21

<210> 123

<211> 22

<212> DNA

<213> Artificial

<220>

<223> artificially synthesized primer sequence called MINT19-S

<400> 123

totgaagaga agcagaggat ca

22

<210> 124

<211> 22

<212> DNA

<213> Artificial

<220>

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<400> 124

cagtctttga tttaccgct tg

22

<210> 125

<211> 24

<212> DNA

<213> Artificial

<220>

<223> artificially synthesized priemr sequence called MINT20-S

<400> 125

cattgcagtt gaaagaagaa gaaa

24

<210> 126

60 / 61

<211> 21  
<212> DNA  
<213> Artificial

<220>

<223> artificially synthesized primer sequence called MINT20-AS

<400> 126

tgccottgaag agactgagga c

21

<210> 127  
<211> 22  
<212> DNA  
<213> Artificial

<220>

<223> artificially synthesized primer sequence called MINT21-S

<400> 127

tctcttcaag gcattctgaa aa

22

<210> 128  
<211> 20  
<212> DNA  
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<220>

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20